TRABAJO DE FIN DE GRADO

« THE LANGUAGE OF THE PRELINGUISTIC STAGE: A SINGLE CASE STUDY »

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ABSTRACT

This study aims to analyse the earliest stages of language development and communication in children. It is relevant issue to know how babies, regardless of their mother tongue, produce or reproduce the same communicative attempts during their first months of life. As a member of my family was recently been born, I was interested in studying theories on children´s language development to be able to compare them afterwards with a real case. Hence, the present work is a single case study in which I have analysed the prelinguistic stage of a child´s development. This stage is surely one of the most important phases in the child´s communicative development since it is then when the child begins to acquire the basic language structure for communication: exchanges of gestures, sounds or looks, transference object, babbling and turn taking, among others. Thus, I have dealt with these preverbal communication skills children develop shortly after birth to analyse their function in language emergence and to contrast the theories provided on this subject with a real single case study.

Keywords: Prelinguistic stage, language development, communication skills, single case study

RESUMEN

El objetivo de este trabajo es analizar las primeras fases en el desarrollo comunicativo y lingüístico del niño. Este es un tema de gran importancia para conocer el desarrollo comunicativo que siguen todos los niños (independientemente de la lengua materna que hablen) durante sus primeros meses de vida. El reciente nacimiento de un miembro de mi familia, motivó mi interés por el estudio de diversas teorías relacionadas con el desarrollo del lenguaje en los niños para posteriormente poder contrastarlas con un caso real. Este trabajo, por tanto, constituye un estudio de caso único en el que he analizado la etapa pre- lingüística del desarrollo del lenguaje en un niño. Esta etapa es, sin lugar a duda, unas de las más significativas en el desarrollo comunicativo del niño ya que en ella se comienzan a asentar las bases para la comunicación: intercambios de gestos, sonidos o miradas, transferencia de objetos, balbuceos y toma de turnos, entre otras. Es por esta razón por la que he tratado las habilidades pre-verbales que desarrollan los niños después del nacimiento con el fin de analizar, por un lado, el papel que desempeñan en la aparición del lenguaje y, por otro, contrastar los fundamentos teóricos en esta materia con un estudio real de caso único.

Palabras clave: Etapa pre- lingüística, desarrollo del lenguaje, destrezas comunicativas, estudio de caso único

0. INTRODUCTION

"My baby is able to utter mama!" "But mine can get his teddy with both hands!" How many times have we heard something like that? Parents always feel proud of how their babies can bubble earlier than the neighbour´s or stay upright or take objects before they are supposed to. That way of "showing off" make other parents feel uncomfortable and worried about their babies´ achievements as they believe their babies are not learning at a steady pace. Babies learn to communicate from the very early stages of life and every gesture, movement, sound or cry seems to be a basic tool of communication. But can we consider them as communicative skills? That is a very interesting subject to be studied and discussed.

Language acquisition has been and is for many linguists and researchers a recurrent object of study. Around 1970s, many studies focused on the grammatical structure of language, as it was believed that syntax was the basis to examine it. It is true that this field of study is essential to study a language, but it does not let us know how and when it emerges in human beings. After the seventies, some experts began to study early manifestations of language, understanding by this not only the first baby statements but also every sound, gesture or babblings they were able to produce. They reached the conclusion that these simple acts were *per se* forms of communication (Perinat 1986: 11).

Bearing in mind all those studies the researchers carried out in the past and analysing other sources of information, the hypothesis to be tested is twofold. First, the first sounds and gestures children produce constitute the first signs of language development and communicative skills. Second, children use this preverbal signs to communicate and interact with others. Thus, in this work, I will deal with the aspects of the prelinguistic phase that we have to take into account when speaking about language acquisition in early child development.

Therefore, in Section 1 I will explain how human communication starts in the individuals and why they need to communicate. The early stages of communication in babies and how they interact with their surrounding world will be also accounted for. Then, I will provide evidence from studies which are worth taking into account regarding children´s cognitive development and which will help us understand better how preverbal communication influences the subsequent language development. On this basis, I will analyse, in Section 2, Piaget and Vygotsky´s theories as a starting point to comment then on the different stages through which

the child goes in the prelinguistic period in Section 4. Before that, I will comment, in Section 3, on different preverbal communication´s elements taking place in those stages in which we will observe the child´s growth at the individual and social levels. The child will experience an evolutionary process in which s/he finally will become aware of oneself and other people surrounding him/her. Besides, the emergence of social behaviours in the child will be increasingly noticeable. It is then, once children have developed all those abilities and behaviours in preverbal communication that they are ready to develop their verbal skills and so their first meaningful words. That is why I will briefly explain, in section 5, the first steps children take in this new development field: the linguistic stage.

After having analysed all the elements involved in children´s preverbal communication, the only thing left is to watch whether the theoretical concepts are tested in practice. Thus, I have considered appropriate to apply the analysis of the previous theories to a single case study in Section 6, where the subject´s behaviour development is studied in his seven first months of life. The single case study, also known as the label N=1, analyses research on the evolution of a single individual or a group of individuals who have been subjected to experimental conditions along a period of time (Lacasella, 2000: 70). In this way, I have analysed the selected individual for seven months in which he has been in constant contact with external stimuli. Although the single case study does not produce generalised hypotheses, it examines determined or new cases and draws inferences according to the results of the investigation (Roussos, 2007: 262). Thus, I will consider in this case study what kind of relevant aspects in the infant´s behaviour help to his/her cognitive development. Finally, Section 7 will draw the conclusions from this work highlighting its most relevant aspects.

1. HUMAN COMMUNICATION

Before talking about the first steps children take in the language acquisition process, it would be appropriate to make a brief introduction about the most relevant concept we should deal with: *Communication.* As far as I know, there have been many scholars who have defined this term from different perspectives, but almost all of them have concurred that it is a process by which individuals transfer meanings.

According to Morreale *et al. (*2007: 5-6), communication is:

> The process of managing messages and media for the purpose of creating meaning" understanding by message any element people use to express an idea (gestures, sounds or words) and by media the means through which "meanings are represented.

Morreale *et al.* (2007) focuses on four ways of understanding communication:

- As information transfer: Communication is the process by which the transmitter sends information through a channel to the receiver. This definition refers to the transactional model of communication (i.e. the code model).
- As shared meaning: When people interact, they are constantly sharing meaning; otherwise they would not be able to understand each other.
- As persuasion: Most of the time, communication functions as a persuasive process by which senders are able to modify the receiver's attitude.
- As community: Communication as a way to participate in society. It is by communication that people interact with each other.

From my point of view, these four aspects of communication summarize what communication is and the functions it has. But there is still one question left, which is the necessity to communicate that we have. By analysing Morreale *et al.´*s principles and our own experiences, we are able to answer this question from a general perspective. As far as we are concerned, every time we communicate with people we pursue a simple goal: people´s recognition of what we mean by uttering or expressing something. Therefore, I could say that the determining factor that leads us to communicate is to achieve a successful interaction within our community. But, how do we get it? It is not only through verbal communication that we understand each other, but also through non-verbal communication, understanding by this every aspect of human behaviour –apart from words- which implicates meanings (gestures, facial expressions, body movements, the voice, etc.) In fact, non-verbal

communication may be the most expressive and understandable way of communication. Sometimes, verbal communication is not enough to understand each other (language deficits, language differences, etc.), so in these cases non verbal communication becomes the main form of communication. Thus, it is also important to deal with the language acquisition process to know how the earliest evidences of human communication emerge.

It is well-known that all species are predisposed by nature to communicate with their peers even unconsciously. An example of this is the honey bee dance also called "waggle dance" (Weinstein 1995: 108). By flying in the shape of an "8" figure, bees can communicate to their nest mates the direction and distance in which the food is located. As stated, communication is, therefore, a means of sharing information between individuals of the same species. But this raises the question of whether we can consider an unintended stimulus communicative; in other words, whether only goal oriented stimuli qualify as proper communication. Regarding this issue, Kaye stated that:

> An act can be intentional and, also a sign, without being an intentional sign. A bird´s taking flight, which may be an index of danger to other animals, is intentional behaviour; but we have no reason to say the bird is *signing* intentionally (Kaye, 1982: 134).

So, by attending Kaye´s explanation, I would say that unintended stimuli can be also communicative as long as they produce an effect on others. Regarding human communication, it is evident that individuals have to share the same meanings and have a goal to get into communication. But, apart from the relationship of individuals who participate in this action, there are also many factors involved in communication. Buckley mentions the followings (2012: 9):

- The motivation to join in communication.
- The social context in which communication takes place.
- The types of message transferred.
- The turn-taking ability
- The comprehension and uses of verbal and non verbal messages.

Focusing on infants´ communicative skills and on cognitive development, I will comment in the next section how communication emerges in children from the very beginning after birth.

1.1 HOW DO WE BEGIN TO COMMUNICATE?

Since babies are born, they are able to interact with the world by producing a range of stimuli which help them to communicate with others. These stimuli refer to facial and corporal expressions, gestures, eyes contact, cries and so on, through which they express emotions and get the mother´s attention to fulfil their needs. This relation between mother and child is going to play an important role in communication. As babies are not yet qualified to manage by themselves, they learn to send messages to their mothers by means of stimuli and simple actions such as suckling and looking. They depend on their mothers to survive who try to satisfy the babies´ needs (Sarvaiya: 4.2.2).

In relation to the sucking paradigm, De Casper and Fifer (1980: 1174-1176) demonstrated through an experiment, in which they used a pacifier which controlled the baby´s suctions (see Fig. 1), that babies preferred their mother´s voice to any other. The experiment results were that when babies heard their mother´s voice the suction stopped and vice versa. The conclusion we get from De Casper and Fifer´s experiments is that babies, within the first weeks of life, are able to distinguish sounds and to know where they come from; their auditory abilities are very sophisticated. This kind of experiments have tested that the sucking of babies is a way to inform about their stimuli (Perinat 1986: 24).

Figure 1. Babies´ suctions experiment

It is clear that babies are able to perceive human language because they can react to what they hear. But babies also keep their attention to human faces and it may be because of their expressiveness. From the age of two months, babies begin to stare at their mothers and to recognise different expressions in their faces. We know that babies are able to distinguish their mother´s expressions because they reproduce what they observe. Thus, when the mother

smiles, the child may reproduce a smile and when the mother frowns, the child will tend to cry. These expressions precede communication.

As communication is an interaction between individuals, the child must know what an interaction entails before they begin to speak. When people communicate with each other, they are establishing a system of alternate exchanges in which both individuals take turns to communicate. In the same way, children learn to intervene in the interaction with their mothers since they are born. But how is it possible? How do children know that it is their time to act? The answer is not complex. Since they are born, babies are used to innate rhythms controlled by their nervous system. Their own organisms establish temporal patterns such as feeding, sleeping or defecation which are temporary cycles they experience. Thus, it is not strange to think that babies' internalised rhythms allow them to establish the interaction patterns (Op.cit: 31-32). According to Kaye (1982: 37-40), the feeding sucking paradigm is an example of an early interaction between mother and child. He considered that the pauses the baby makes while eating is an opportunity the child gives the mother to interact.

The interaction between mother and baby is, therefore, the preceding step to communication development. It is by means of the turn-taking pattern that babies begin to know how communication functions; thus, they start to produce their first communicative attempts. But before I continue covering these specific issues, it is proper to explain the main characteristics of communication (Buckley 2012: 32).

Firstly, what we need to communicate with each other is just shared information. When humans communicate, they try to contrast their own perceptions of the world with the others´ experiences. To define this interpersonal activity of sharing meaning and common knowledge, it is appropriate to use the term *intersubjectivity.* Children develop this capacity because they are introduced to a context in which meanings are already shared by the individuals, so children have to accommodate to the situation which has been given to them. But when does it begin? When does intersubjectivity appear in children? Trevarthen explained that since children are two months old they begin to produce communicative intents. They begin to pay attention to the adult expressions and, consequently, they need to interact with them. It is then that gestures, babblings or looks become communicative attempts. Trevarthen refers to these activities as *primary intersubjectivity.* In the age ranging from four to nine months, children experience new social activities: they begin to focus on the objects, they begin to realize some familiar elements which are like rituals to them (to have a

bath, eat, nappy changing time...), they interact with their mothers in a more conscious way while they are playing (they usually laugh) etc. From nine months onwards, children begin a period in which their attention towards objects is going to be regulated by adults; that means that children consider the adult an agent through whom they can reach objects and learn about their use. In this period, they are equipped with secondary intersubjectivity[1] (Perinat 1986; Trevarthen 2011; Trevarthen and Aitken 2001).

Once we know how communication functions and before I proceed with more specific issues on the baby´s attempts to communicate, I have considered relevant to mention two psycholinguistic theories based on infants´ cognitive and communicative development which were significant to the study of language acquisition. On this basis, I will focus on two major psycholinguists who dealt with these issues: Piaget and Vygotsky.

[1]This term is also given by Trevarthen (Perinat 1986; Trevarthen 2001, 2011) and refers to the new interaction the child has with the adult. Now the child is able to realize that adults are the sources to get the knowledge.

2. THEORIES ON CHILDREN´S COGNITIVE DEVELOPMENT

Language acquisition has always been an important but also a difficult issue to investigate. Throughout history, many linguists and psychologists have provided their own theories about how children acquire knowledge and develop language, but not all of them have concurred in the same ideas. Specifically, I will deal with twentieth century theories because they have served as a model for the recent researches on children´s linguistic development. Therefore, I have considered relevant to mention some of these psycholinguistic theories based on infants´ cognitive and communicative development.

Piaget and Vygotsky were two mayor psychologists of that decade who covered the children´s learning and development progress issue. Both provided theories based on the cognitive development, they thought that language was subordinated to the thought and that children acquired knowledge through experiences[2].

2.1 PIAGET

Piaget´s work focused mainly on the child´s cognitive development. Apart from being a psychologist Piaget was a biologist interested on the child´s intellectual development. This is why his studies are explained from a biological point of view. He talks about *genetic epistemology* to refer to his own theory of knowledge developed in a similar way to the evolutionary process of the species. With *epistemology,* he refers to the general theory of knowledge and the second term *genetic* is related to the origin and the process of knowledge construction (Pasternac and Benedito 2003: 279).

Piaget´s theory of knowledge consists of different successive stages through which knowledge is increasingly balanced; this means that when it arrives at the last stage, the cognitive development is completed. Piaget compares this progress with a spiral in which every circle corresponds to a specific stage of the cognitive development. All of them are constructed on the basis of the first stage. As observed in the Fig.2, cognitive development is an evolutionary process because knowledge goes from a basic structure to a complex one (Lafuente 1977: 27).

[2] This is the same as saying that they believed in the learning process of language.

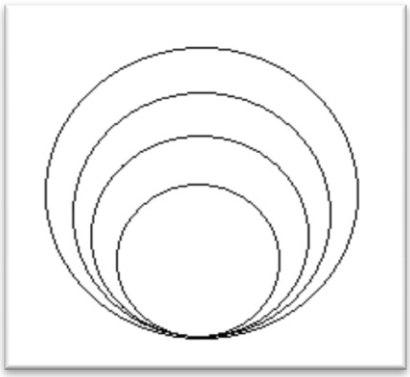


Figure 2. Lafuente´s representation of cognitive development (1977: 27)

The evolution of species is determined by natural selection, a process in which environmental factors affect the species´ development. In a similar way, knowledge is also related to the natural surroundings as it depends on the human society to compose it. This means that every aspect of the environment such as culture or social class is very important for the cognitive development. To comprehend this fact, Lafuente mentions the case of a native African for whom the concept of "cinema" does not exist because it is not a cultural reality in his/her society. But Piaget emphasizes that the cognitive process is not attached to the environment, he believes that knowledge development is independent from society. On this basis, Piaget focuses his studies on what he considers as the appropriate determiner to acquire knowledge: the *object*. It is through the interaction with an object that the child´s actions become knowledge; when a child manipulates an object s/he begins to be aware of it and then s/he is able to acquire its meaning or value (Op. cit.: 96).

In the knowledge development process, Piaget distinguishes two kinds of studies attending the individual (ontogenesis) and the species (phylogenesis). As long as the first study deals with the knowledge development in the individual, the latter involves the entire human collective. According to the phylogenetic´ study, Piaget uses the term *epistemic subject* to define what individuals of the specie have in common in the cognitive process (Op. cit.: 97). In order to clarify the ontogenesis process which studies the individual predisposition to the cognitive development, it is relevant to mention two factors which participate in it: internal and external environment. The former refers to the individual capacity to reach the last stage in the knowledge construction and the latter refers to the individual surroundings. These two factors are important to understand how cognitive development evolves in the same way among individuals. The only problem is that Piaget´s theory does not attach this development

with the environment. So his theory lacks an important aspect in the individual´s cognitive development that is the external environment (Op. cit.: 103).

Before talking about the origin of cognitive process, we will mention the stages in which Piaget classifies the knowledge development:

- Sensory-Motor stage (0-2 years)
- Preoperational stage (2-7 years)
- Concrete operational stage (7-12 years)
- Formal operational stage (12-15 years)

According to Lafuente, this classification can be simplified in two stages: Sensory-Motor stage and Operational stage. This is justifiable because the most important stage in the knowledge acquisition is the process from the non operatory stage to the operatory one; in other words, the process to acquire logical thought. I will focus on the first one, the sensory-motor stage, because that is the period in which children develop linguistics and communicative skills.

Regarding the origin of knowledge, Piaget says that the cognitive process begins with the subject´s action. It is through their actions that we will be capable to discover how children learn, so the first thing we must know is how children´s action functions. Hence, children´s interaction with objects will become essential in the knowledge acquisition process (Op. cit.: 105).

There are two kinds of actions: internalized actions and external actions. In the sensory-motor stage the child has not acquired the knowledge yet, thus his actions are not internalized (Op. cit.: 109). S/He does not know what the function of their actions is because s/he only acts by manipulating objects, as if s/he were the centre of everything. This is related with the concept of *egocentrism* which refers to the child´s behaviour during the first stages of knowledge when s/he believes that everything revolves around them and that all of their movements will condition the context in which they are placed (Op. cit.: 140). In the sensory-motor stage, the child has a *representative intelligence*[3] which means that the child´s actions are not coordinated yet with others to produce transformational operations as it occurs with the *operatory intelligence*[4] in which the child does not focus on his own actions but on general

[3] It has to do with the though and its actions: perception, language, mental imagery, etc.
[4] It deals with the actions undertaken to get a transformational change of any object or person.

actions and their results (Op. cit.: 111). At the end of this first stage, the child gets the concept of *object permanence* (i.e., to know that an object still exits despite it being hidden) (Shaffer 2013: 208-209).

Although the following stages on the child´s cognitive development are not relevant for the language acquisition process, I would like to mention briefly what Piaget proposed. According to this author, it is in the preoperational stage when the child acquires the symbolic function. The child is now able to evoke something absent by having a representation of it in mind. The acquisition of this cognitive skill means that the child has learnt to represent objects by means of symbols such as words, images or gestures. Thus, children adopt different attitudes to express the symbolic function: Deferred imitation, imaginative play, drawing or mental images production (Lafuente 1977: 115-117).

Piaget´s third stage of cognitive process is the concrete operational period. Children are able now to manipulate concrete objects by following logical thinking, so their thoughts become less intuitive in this period. In this period, children can manipulate objects by following logical operations such as enumerations or classifications (Watts 2009: 336). Finally, at around eleven years, the child moves into the formal operational stage in which s/he is able to solve problems attending to his deductive or scientific reasoning. In this stage, children can formulate hypothesis and manipulate not only concrete but also abstract objects. Unlike the previous stage in which actions were performed on tangible objects, formal operations are based on mental actions (Lafuente 1977: 117-119).

Like Piaget, Vygotsky was also a constructivist psychologist. He believed as well that children were active learners, i.e. they were able to learn freely by exploring or manipulating objects. Besides, both of them thought that social interaction played an important role for children´s cognitive development, the main difference between them lies on the fact that Piaget thought that children act on their environment to learn about it whereas Vygotsky studied the interactions between individuals and society as the key aspect of children´s learning and development. Although they shared some ideas about knowledge development, they differed in some others, as will be explained below.

2.2 VYGOTSKY

Vygotsky´s learning theories were partly opposed to Piaget´s. His works focused on psychological theories whose aims were the construction of new pedagogies for children. He thought that education was linked with the psychological development of the child:

> Vygotsky´s primary contribution was in developing a general approach that brought education, as a fundamental human activity, fully into a theory of psychological development. Human pedagogy, in all its forms, is the defining characteristic of his approach, the central concept in his system (Daniels 2003: 18)

Pedagogy depends on the social context, the educators and the children´s capacity of learning. According to that, there are different didactic methods which involve different results in the educational system. All of them are constructed in particular social contexts. To understand this, it is important to have in mind Vygotsky´s theory which explains that cultural, social and historical forces play an important role in the psychological development of a child. From the moment in which the child is born, s/he belongs to a social context through which he will receive information and, afterwards, develop ideas.

In relation to Vygotsky´s theory, it is relevant to mention the concept of *Mediation.* This term refers to the intervention of an agent which acts as a mediator between the subject and the object; in other words, the element through which the individual receives the knowledge of the external world. It could be signs, language, an individual, etc. (Op. cit.: 31). There are three types of artifacts which act as mediators: *psychological instruments* through which we control our mind and behaviour, *technical instruments* through which we can alter objects, and human beings through which we get knowledge (Op. cit.: 33-36). The first group involves everything which helps individuals to control their perceptions, memory or attention such as language, writing and everything related to the symbolic function. The second group involves the transformation of objects into instruments of value. Finally the last and most important group deals with humans´ mediation as artifact. According to Vygotsky, children are able to act with the help of the last group of mediators, human beings. Since they are born, children are determined by their social relations with the world, they are constantly interacting with people around them who provide them knowledge from the very beginning.

Regarding the acquisition of knowledge, Vygotsky described how children achieved functions. It is a process in which the action appears first in the child ´s social environment (*interpsychological level*) and then the child assimilates it (*intrapsychological level*). In other

words, it is a process in which the child´s ability is acquired from social interaction (between people) to individual action (inside the child). As aforementioned, children´s learning skills are mediated by adults through whom they can perceive the world experiences. However, adults collect experiences and get information from texts. According to Cole, the adult provides the child with his own social context to participate in an action although they have not learnt it before. So the child begins to learn within the social environment first and then within the individual one (Cole 1998: 275). As Vygotsky said, "the only way to learn something, say, how to acquire knowledge, is by doing so, in other words, by acquiring knowledge" (Daniels 2003:59; Vygotsky 1997: 324).

Vygotsky´s major contribution was the creation of the concept *zone of proximal development* to refer to the difference between what children can do on their own and what they can do with external help either of an adult or of a better-qualified child (Daniel, 2003: 86). According to Vygotsky, the learning process begins within the social environment and is developed through education and at home. Both environments are necessary for children to learn. Sometimes, the process is altered by changes in the social context and also by biological limitations in the child: "Any physical handicap…not only alters the child´s relationship with the world, but above all affects his interaction with people. Any organic defect is revealed as a social abnormality" (Op. cit.: 73).

As a final note, I would like to mention the major difference we find between Piaget and Vygotsky. The difference between Piaget´s Stage Theory of Development and Vygotsky´s Theory on Constructivism is that the second one focuses on the importance of achieving knowledge through the social context while Piaget deals with the individual development process in children.

Taking these theories as starting point but looking at new theories and research, we will insightfully look at the evolutionary process of infants´ language development in sections 4 and 5. To begin with, I will define some relevant concepts in relation with non verbal communication that I consider essential to understand children´s communicative acts.

3. NON-VERBAL COMMUNICATION

As aforementioned, I think non-verbal communication is one of the most expressive ways of communication because it enriches verbal expressions. When we do not know how to express an idea with words, we usually resort to gestures and expressive mechanisms to make our message accessible to others. But it does not mean that language is less understandable than corporal expressions, just the opposite, verbal communication is the base to interact with each other:

> The problem is that, compared with conventional human languages (including conventionalized sign languages), natural gestures would seem to be very week communicative devices, as they carry much less information "in" the communicative signal itself. Consider pointing, which I will argue later was the primordial form of uniquely human communication (Tomasello 2010: 3).

Tomasello explains that it is in fact non-verbal communication that is considered less communicative than language. The problem comes when we only make manifest one of them, which is what happens at the early stages of life. Babies´ communication skills are known as preverbal or non-verbal communication because babies are not able to talk yet. In this stage, babies interact with people by using paralinguistic expressions (gestures, facial expressions, etc). When babies grow up, it is through language that they complete their cognitive development and carry out the actions their mothers once realized for them. But this issue will be dealt with in section 5. Before that, I will provide in what follows some traits and behaviours develop when they intend to communicate.

3.1 EYE CONTACT

"This is a basic skill of corporal language beginning shortly after birth" (Hill). At around two and a half weeks of age, babies usually gaze at their caregivers´ faces as a form of communicating with their parents. Eye gaze provides signals by means parents can comprehend babies´ behaviours and allows children to focus on people´s faces and objects to learn about them (Doherty-Sneddon 2003: 20).

3.2 CRYING

As soon as babies are born, they begin to cry. But this weeping is not yet a form of communication; it is just a reflexive behaviour. It is when they grow up that they learn by crying they can get adults' attention to satisfy their needs. Hence, they cry when they are

hungry, when they want someone to change their diapers, when they feel uncomfortable, etc. They are now conscious of what their cries imply, so they use them as a way to communicate (Levine and Munsch 2010: 35).

3.3 LAUGHING

At around two months of age, babies begin to smile, that means that they are trying to interact with their parents. After the smile comes the laughter, which is when we can ensure that babies are communicating with them. It is a sign of pleasure by which adults interpret their babies are enjoying; so in this way babies introduce their parents into games through which both can interact together (Petrie 2011: 32).

3.4 GESTURES

In adults, gestures serve as tools in the "organisation of thought"; they are an aid when people are trying to communicate something unsuccessfully. But, the way in which children create gestures is totally different; they use them as an alternative to words. Through babies´ gestures, we are able to perceive what children want. They help us to guess babies´ intended actions and this is partly due to the expressiveness of the signs (Esposito 2007: 11-12).

Thus, it is clear that babies´ gestures precede verbal expressions and that they allow adults to comprehend their intentions before they can speak. Some of the children´s gestures are: "waving good-bye, raising their arms to be picked up, flapping their arms and legs to show excitement, smacking their lips when offered food or refusing to open their mouth when they have had enough or do not like the food" (Warburton 2006: 2). For a more accurate classification of babies´ gestures, see Table 1 taken from a research article provided by the PubMed Central (PMC from now onwards) web platform[5], to clearly state some of the babies' preverbal gestures.

[5] PMC is a free archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine (NIH/NLM).

Table 1. Classification of gestures (Source: PMC)

GESTURE DESCRIPTIONS BY CATEGORY		
CATEGORY	**GESTURE**	**DESCRIPTION**
Action/Event	*Diaper Change*	*Pat hip*
	Play	Closed fist with pinky and thumb sticking out, hand rotating
	Wash	Two hands rubbing together as if running after water
Emotion	Happy	Open hands, palm out, to frame sides of face
	Mad	Clawed hand running in front of face (accompanied by furrowed brows)
	Sad	Draw forefinger down cheek
	Scared	Open palm tapping chest
Feeling/Sensation	Cold	Arms to side, figts clenched, shaking as in "Brrr"
	Gentle	One hand stroking the opposite arm
	Hurt	*Closed fist tapping chest*
	Loud	Hands over ears
	Sleepy	Folded hands laid against cheek
Nonsymbolic	Point	Using finger to point at something or someone
	Wave	Waving goodbye or hello
Object	Ball	Palm of hand down, motioning up and down as if bouncing a ball
	Bird	Arms or hands fluttering
	Car	Mimicking steering a wheel
Parent	Dad	Open palm, thumb tapping forehead
	Mom	Open palm, thumb tapping chin
Question	Where?	Palm of hands up next to shoulders
Request	More	Bunched fingers of both hands tapping together
	Outside	Fingers in claw shape (as if gripping doorknob), twisting
	Snack	Fingers of one hand together tapping mouth
Time	Later	Rotated right thumb/forefinger in open left hand
	Popsicle Time	Tapping back of palm to chin
	Wait	Right fist tapping open left hand
Yes/No	No	Head shaking from side to side as if saying "No"
	Yes	Nodding head up and down as if saying "Yes"

Note. *Italicized* gestures were used only by caregivers.

3.5 FACIAL EXPRESSIONS

Facial expressions are one of the best ways to communicate emotions that we have. Through them, we are able to express a great range of emotions such as happiness, sadness, fear or anger only with our facial expressions. Apart from producing such emotions, we develop the ability to "read" and understand them in others, which is essential for communication and for the beginning of mind-reading. Soon after birth, babies are able to communicate by means of emotional expressions; they can change their facial appearance according to their moods. For example, if a baby sucks a lemon s/he will probably show a disgusting face because of the strong flavour it has for a child. These expressions function as clues for parents to let them know the babies´ feelings (Smith *et al*. 2015; Vallotton 2008).

According to Sullivan[6], it is from the 1980s onwards that studies for the facial expression analysis of infants began to emerge (2003: 120). From then onwards, systems which provide the decoding of more accurate faces´ have been set up. Thanks to these studies, we can now establish a pattern to recognize emotional expressions, such as the followings (see Fig. 2):

- SADNESS: According to Sullivan, the reason why sad expressions appear in children is unknown. But what some scholars claim is that sad expressions are related with anger ones. The main features of this expression are raised and angular brows in appearance over narrowed eyes, raised chin, down-turned mouth´s corners and forward projection of the lower lips (Op. cit.: 136).

- ENJOYMENT: There are two main facial expressions of enjoyment. The first of them is the smile, which occurs at the early stages of life. The most recognizable features of this expression are: "narrowed eyes and widened mouth with corners raised". Laughter, which is the second expression, is characterised by "wide-opened mouth, gaping enjoyment expressions and characteristic vocalizations" (Op. cit.: 125).

[6] Margaret Wolan Sullivan is Professor at the Institute for the Study of Child Development at Rutgers Robert Wood Johnson Medical School.

- SURPRISE: Surprise expressions in infants take place when something unexpected occurs. They usually raise and arch their brows, their eyes are widely opened and their mouths "gapes with jaw slackened, assuming an "o" shape" (Op. cit.: 124-128).

- FEAR: "This expression involves raised and straightened brows, widened eyes with tense lower eyelids, and horizontal retracted lips". Sullivan explains that it is not until 7-12 months of age that children do not experience and show this kind of emotion. But when they do it, it is due to some factors such as stranger people, height or masks (Op. cit.: 137).

- DISGUST: Disgusting expressions usually take place when babies taste bitter and sour flavours. Babies have expressive components for this expression: "nose wrinkling, upper lip rising, narrowed eyes and blinking" (Op. cit.: 132).

- ANGER: When babies are angry they express their emotions through visible changes in their faces. They usually frown and the mouth, the most noticeable feature, becomes a wide-opened square. Anger expressions are almost always accompanied by a cry (Op. cit.: 134). When they grow up, infants also show these facial components accompanied by a fighting posture that is with one-hand up as if they are about to hit someone. But this defense posture becomes uncommon in children over the age of six (Davis 2010: 242).

Figure 3. Children´s facial expressions (Source: Internet)

4. PRELINGUISTIC STAGE

Also known as pre-speech stage, the prelinguistic stage is the period in which the first signs of communication emerge in infants and this takes place before the first word is uttered. During this language development phase, which occurs throughout the first year of age after birth, infants begin to produce gestures, corporal expressions, sounds and all kind of preverbal skills mentioned previously which help them to interact and communicate with adults. For prelinguistic communication to occur there must be a social interaction from the very beginning.

But what is really significant in this period is the process by which children achieve new abilities. So, I think it is appropriate to distinguish the different phases in this evolving process. To this end, I have used Trevarthen´s classification as a model (see Table 2). This author analyses the first two years of the child´s life and divides them into four periods of 10, 20, 30 and 40 weeks, respectively (1982). Each of them is composed by the skills the child develops in that period of time.

Table 2. Classification of the infants´ skills phases (Adapted from Trevarthen, 1982)

FIRST STAGE (0-10 WEEKS)	SECOND STAGE (10-30 WEEKS)	THIRD STAGE (30-60 WEEKS)	FOURTH STAGE (60-100 WEEKS)
- Face staring	- Limited face staring	- Mother attachment - Fear of unfamiliar faces	- Intimate and close relation with familiar people
- Paying attention to stimuli and human voice.	- Objects attention	- Great interest in objects utilization and in adult´s actions	- Common objects with a different provided meaning.
- Weak actions (pre-reaching)	- Reaching objects gesture	- Motor skills Independent movements	- Understanding common words - Cooperation resistance
Affective games: -Smile -Gestures -Protoconversations -Reflexive crying -Vegetative sounds	**Games/Jokes:** -Laughter -Cooing -Babblings -Object manipulation -React to music with corporal movement	**Cooperative Games:** -Reciprocal interaction (asking objects, calling for help...) -Vocalizations	**Symbolic Game:** -Symbolic representation of objects -Creativity

This schema depicts briefly some of the abilities the child develops throughout his/her earliest years of life. But to explain it in more detail, I have distributed the child´s developing communicative skills into four different stages: From birth to two months, from two to six, from six to nine and from nine to twelve. In what follows, I will comment each of stages according to the child´s progress.

4.1 FROM BIRTH TO TWO MONTHS

During this period, children are in a state of quietness. This is due to their body´s internal rhythms, i.e. are used to a specific day-night pattern constituted mainly by the sleeping hours. Although babies do not produce yet well-defined actions, they begin developing the basic skills of communication. The first skill we notice is the child´s cry when they are distressed which can also be manifest by fusses or "coos"[7]. After birth, infants can also recognize their mother´s voice because they are used to hearing it in the womb. This recognition plays an important role at the beginning as they prefer familiar voices and faces. Regarding the latter, babies of this age begin also to establish physical eye contact with others. Although this stage does not have many distinctive and significant components in communication, it introduces what comes in the next paragraph (Perinat 1986: 22 and ff.).

4.2 FROM TWO TO SIX MONTHS

It is from two months of age that infants experience a developmental transition in their progress (Lavelli 2005). They begin to be interested in people around them; they now pay attention and react to adult´s vocal and facial expressions and try to interact with them by producing vocal sounds other than coos such as "ah ah oo oo" (Kearns, 2010: 180).

According to Richelle, it is possible to relate language acquisition to these first sounds children produce. He mentions some linguists such as Lennenberg who classify the shouts, cries and vocalizations as the first sounds children are able to generate, because they constitute the basic vocal activity that humans can produce since they are born. Some other linguists he refers to are Grégoire and Lewis who studied that when children begin to be in contact with a language they first reproduce its intonations and accentuation. After this, children begin to reproduce some phonemes. Jakobson and Halle studied that the first

[7] Murmuring sounds.

phoneme pairs children are able to pronounce are /pa/ and /ma/. Then it is common to reproduce the /t/ phoneme (Richelle 1989: 57-58).

Children´s smile is another feature which emerged at the beginning of this period. By means of this, infants express pleasure and let their parents know that they are comfortable and enjoying time. Thus, vocalizations takes place at the same time the child begins to smile, which is around the two months. Both, vocalization and smile play an important role in the individual socialization (Op. cit.: 56). This means that the child has acquired "a special kind of consciousness about the relation between self and others" (Kaye, 1982: 205). From this point onwards, toddlers become more expressive and begin to show excitement to familiar sounds. They also try to imitate the sounds their mothers produce and start to take turns during conversation. In this sense, it is essential the relation mother-baby[8] because babies will begin to learn how communication functions by means of their mothers´ actions.

According to Clark (Perinat 1986: 110), before the age of five months the behaviours of children with their mothers is not considered communication although the interaction between them is important for its development. Around this age, children usually pay attention to objects and make attempts to get them, but sometimes they are not able to do so because of their physical inability. Their mothers are the agents who complete the children´s actions, so they transfer them the enticing objects. Clark explained that this interaction is not considered yet communication until the child is able to retain the object. Like Clark, Trevarthen proved that even four months old infants attempted to get an object[9] although they did not complete the action (Perinat 1986; Trevarthen 1974). The conclusion we draw is that children first have to learn how the object transference functions to interact with their mothers. Vygotsky (Newman and Newman, 2014: 38) explained this process by saying that functions begin in external activities (intermental) and then the child is able to internalize them (intramental).[10]

At the early stages of the development, the child cannot actively participate in reciprocal activities such as the object transference. At first, when the mother provides the child with an object, s/he will catch it but there is no a mutual transference, the mother does not receive the object back. But how does child finally achieve it? The mother, who wants the child to give her the object, will extend her hand so that the palm is facing upward. When the child looks at

[8] Understanding by this relation: the system of "bidirectional effects" in which mothers reacts to infants as well as infants to mothers (Kaye, 1982: 33).
[9] Trevarthen called this failed action "pre-reaching" (Perinat 1986: 111; Trevarthen, 1974:230).
[10] For a more detailed discussion in this topic, see Daniels (2003: 56 and ff.).

the mother´s hand, s/he does not know what it means at first. By repeating the action of the mother reaching the object with her hand the child understands its meaning.

4.3 FROM SIX TO NINE MONTHS

In this period, children begin babbling, they start to speak to themselves by using "sing-song" patterns of adult speech[11]. Children´s gestures become better defined as well: they begin to use simple hand gestures such as clapping. But what is relevant during this stage is the children´s actions development. Once they have finally established the transference pattern, they can learn alternative structures such as objects exchanges, objects placements, etc. (see Fig. 4):

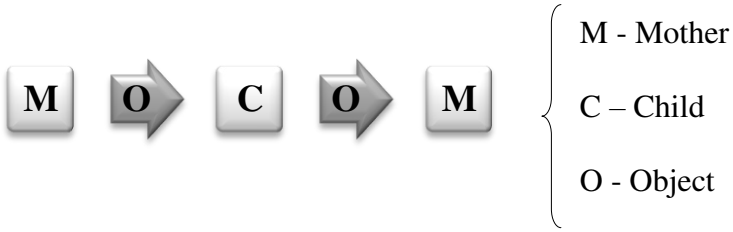


Figure 4. Object transference schema
Source: Own supply

Furthermore, they will be able to participate in activities on their own. It is then when actions become gestures. In this stage, children´s actions are intentional; they already know the relation between their actions and the results. We can say that these actions are communicative.

But, how do children begin to act? Trevarthen explains that children´s actions are determined by motivation which leads an individual to act. They are related with the intentions and the perception of objects (2011: 3). When children try to catch an object it is because they are motivated to do so, they feel the need to get it. These motives are inherent to individuals. At this period of time, children are able to clearly express their intentions through external and well-defined actions: staring, head turning, smiles, hand gestures, etc. Thus, we know what the aim of children is by paying attention to their behaviour.

[11] This means that the rise and fall´s tone infants use when babbling are similar to real conversation´s tone.

4.4 FROM NINE TO TWELVE MONTHS

This period can be considered as the last preverbal communication stage because from here onwards children begin to develop language. Therefore, the features we can notice during these years precede the language acquisition of the child. It is common for the child begins to begin recognising and pronouncing simple words. As with gestures, children begin to produce their first utterances by imitation. When the mother produces a sound, the child tries to reproduce it, and then she adds some action such as pointing out an object at the same time she produces the sound. These two actions will help the child to establish the relation between the noun and the object assigned.

Regarding infants' actions, children over nine months begin to play with their gestures when an object or sound gets their attention. When there is a new stimulus in the environment, they automatically look in direction of it. Sometimes they can even anticipate to that stimulus by turning their head or staring at the object when this is delayed. Then, children learn to point at the enticing object. But this action is learnt by imitation of their mothers as they usually get the baby´s attention by pointing at the object with the finger. Actions such as looking and pointing at allow children to get the reference. But a further way to get the reference is by playing. By games between the mother and the child the latter gets the desired object; the mother usually takes the object which has caught the baby´s attention and she offers it to him by letting him/her see what s/he can do with the object. For example, if a baby is looking at a rattle, the mother will take the rattle and shake it. Consequently, the child will do the same because s/he already knows what to do with it (Lock and Zukow- Goldring 2001: 407 and ff.).

Considering all these things, it is logical to think that patterns of children´s interventions are similar to a conversation. Bateson[12] called them *protoconversations* because they are not proper conversations yet as babies are not able to speak, but they are the basis for the communicative development of babies. Once they learn the communication´s process and the factors involved in it, children will be ready to start using verbal communication (Perinat 1986: 67).

[12] Mary Catherine Bateson is a writer and cultural anthropologist who introduced the term of *protoconversation* in 1975 while studying some films about mother-child interaction.

5. LINGUISTIC STAGE

The final step in the language acquisition process is the linguistic stage. Around the age of ten months, children usually pronounce their first word. From that moment onwards, we can observe a huge evolution in which children begin to acquire an amount of words depending on the age they have.

Richelle provides data about the lexical repertoire children acquire in a particular period of time (1989: 60). Taking Richelle´s data, I have created the following graph (see Fig. 5) which represents the words´ acquisition progress to clearly portray the children´s learning process:

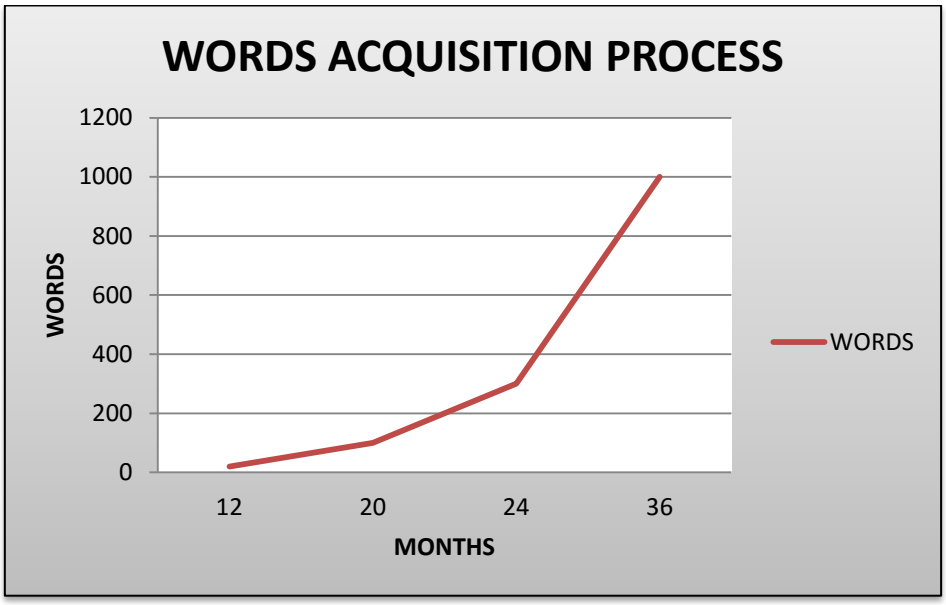


Figure 5. Words acquisition process

As shown in Fig.5, there is a sudden increase in the acquisition of words at the age of two. According to Richelle, there is no evidence of how children of this age are able to learn more words, but what is really important is to know how they use those words. The following schema shows the different stages of children´s language development:

- Sensitive to prosodic cues: Since they are born, children are able to distinguish between utterances of maternal language and other languages.
- Sensitive to phonotactic constraints: They are able to figure out that certain sequences are typically found in certain positions.
- Developing syntax:
    1. One-word stage

2. Two-word stage
3. Telegraphic speech stage

At first, they are able to produce single words of complete meanings. They apply to one word an entire speech meaning. For example, if a child says "water" they may want to say "I want to drink water". Although by this age they only pronounce simple words, it does not mean that they cannot comprehend well-formed utterances. On this matter, Richelle explains that Smith *et al.* carried out some experiments in which children had to react to what they were said and concluded that most children could react to well-formed utterances as well as to single semantic words. Thus, as Richelle states, language comprehension comes before language production (Op. cit.: 64-66).

Once children can say words, we can start talking about the development of syntax. They begin to learn syntax before they go to school, although they are not consciously aware of the syntactic rules. Even so, they are able to distinguish between grammatical and non grammatical sentences. But, how do they learn them? The answer to this question is not complex as if we analyse the context in which children´s progress takes place, we will realize that the major stimuli children have to learn come from their parents and people around them.

Therefore, adults are the main responsible for children´s learning. By listening to them, children learn how to construct and choose the correct sentences. According to Richelle, not all speakers can determine the child´s language process. There are some people who play a more important role in this task and they are those who speak to the child, namely the mother. The way in which the mother talks to his/her infant is peculiar, she usually provides him/her of an appropriate language by using simple sentences and expressive intonations. So, the mother uses an adapted language every time she communicates with the child (*baby talk*) (Op.cit: 84 and ff.). For children to learn in conversations, the mother should teach them new words but also correct them when they make mistakes. However Brown thinks that the child acquires better results when the mother provides them with a new but related concept rather than when she corrects them (Op. cit.: 92).

It is by the age two that children have learnt enough words (approx. 300 words)[13], and so they can now produce two-word utterances. These two words express a semantic relationship such as the followings:

- Agent + action→ *mommy come*
- Agent + object→ *mommy ball*

There is a wild range of possibilities in which two words express a proposition[14]. After this stage, children over two begin to construct simple syntactic patterns attending to the word order: Subject + Verb + Object. Then, they develop adult-like syntax, but it does not mean that the language acquisition process has finished; rather the opposite, children begin now to extend their learning fields to the phonological domain, semantic domain, syntactic domain, and pragmatic domain.

[13] See Figure 5.

[14] A proposition is defined as a statement that expresses a concept that can be true or false (Definition taken from: http://www.oxforddictionaries.com/es/definicion/ingles/proposition).

6. SINGLE CASE STUDY: METHODOLOGY

INDIVIDUAL´S INFORMATION

-Gender: Male
-Name: Daniel
-Age: 7- month
-Disabilities: None
-Observational period: Seven months

As part of my study on children´s preverbal development, I have carried out a single case study to analyse the progress of an 7-month baby called Daniel from his birth to the age of seven months and to test whether the concepts described in the second, third and fourth sections of this work are verified in real life situations.

Before analysing the subject´s behaviour development I consider important to differentiate between the single case study and group experiments because the way in which data are collected is totally different in both of them. While the latter compares information between groups of individuals (i.e. the experimental group and the control group[15]), the former does it by analysing individual evolution and changes.

Regarding the single case study design, it is possible to distinguish two types of research according to the external impact on the study variables:

- Observational research: Characterised by "carefully observing and measuring variables and the relation among them" (Nock *et al.* 2007: 339).
- Experimental research: Consisting on "systematically manipulating certain variables and measuring the effect on other variables" (Nock *et al.* 2007: 339).

My study belongs to the first case; therefore, I will observe and analyse the subject´s constant evolution by measuring and comparing the individual´s behavior alterations according to the events occurring in each situation.

More specifically, the methodology used for the behavioral analysis I will provide lies on the individual´s observation first, followed by the recording of perceivable behaviours. I have analysed the subject´s evolution on the basis of communicative functions such as prelinguistic vocalizations, gestures, facial expressions, smiles and laughs. To achieve the expected results,

[15] A group of subjects that is matched as closely as possible with an experimental group, but is not exposed to any experimental treatment. The results are then compared to determine the changes that may occur due to the experimental treatment. (Definition taken from: http://www.businessdictionary.com/definition/control-group.html).

I had to take into account two aspects on the basis of Lacasella´s considerations (2000: 70-71):

- The periodical measurement of the individual´s behaviour development to compare its variations[16]. As a measuring instrument, I have used a series of video recordings to check such evolution.
- The individual´ actions. The subject must act under his own control, so there must not be any force which intervenes for the individual (we should not confuse forces with stimuli[17]).

Regarding the research procedure, I have analysed ten video recordings which I have considered the most significant ones for the research as they show some meaningful features in the subject´s behavioural evolution (i.e. gestures, facial expressions, vocalisations, etc). These videos have been collected from different sources: some of them have been recorded by his parents, others by members of the family as his aunts and some by me. Each video has been recorded in different sceneries such as the subject´s home and other relatives´, so the participants who appear in each video are different and, as a result, the stimuli vary in each case. These stimuli were generated by those people around the individual but also by objects such as a teether, a baby play mat and a dummy. Along these selected videos, which correspond to each month of the observational period[18], the infant shows a continual upward development of preverbal communication: he begins by showing few communication attempts (such as slight smiles and unintentional corporal movements) to finally achieve a considerable level of social communication (i.e. laughs and synchronised movements).

As for the participants involved in the research, apart from the subject at issue, some relatives of the infant take action in it: five women and two men. The age of these participants is diverse, from nineteen (the youngest) to fifty (the eldest). In relation to the selection process of the participants, I must say it was not restricted; they voluntarily participated in the research.

[16] That is to say changes in the subject´s behavior.
[17] By *forces* we mean the external factors which control the child´s actions while by *stimuli* the external factors which influence the child´s behaviour.
[18] For months 4, 5 and 6 there is more than one video, which explains why are more videos than months studied.

VIDEO RECORDING 1 (FIRST MONTH)[19]

Daniel is placed on a baby play mat, on the floor. It is a musical mat with some hanging animals and bright colours features. At first, he seems to be paying attention to what is hanging although he does not stare straight at any particular hanging element. He is moving constantly his arms and legs, but I think his movements are not intentional yet, but reflexive because they are not coordinated. Then, his father, the one recording this video, begins to approach Daniel until he gets near him. Daniel suddenly stops his movements for a while and fixes his gaze on his father who talks to Daniel and caresses his cheek with his finger. In that moment of contact, Daniel reacts by producing a smile. Afterwards, the father goes away from Daniel. The baby stops smiling and resumes his movements; Daniel is again paying attention to the hanging elements.

In his first month after birth, Daniel is not able to produce intentional actions yet or to actively communicate with people. Trevarthen and Aitken (2001: 6) stated that this stage was characterised by the individual´s quietness state, and that is what I observed in this video: Daniel is not able to talk and act; he cannot participate in society yet or actively interact with people around him. But while Daniel is not capable of doing these things yet, I can glimpse non-verbal communicative features in his behaviour: Daniel fixes his gaze on his dad and produces a smile when his dad talks to him. He also pays attention to his father´s voice when he talks to him. According to Trevarthen (1982), newborns do not usually smile at people but sometimes they smile when looking at others´ face or hearing their voice, thus, which is exactly what happens here. These distinctive features are part of communication, but since they are emerging they are not well defined yet.

VIDEO RECORDING 2 (SECOND MONTH)

Daniel is held by his cousin, who is sitting on a couch. He is paying attention to his aunt, who placed face to face with Daniel. She is talking to him expressively; she is trying to speak slowly and in an affective way to catch Daniel´s attention. Daniel is fixing his gaze on his

[19] A CD including all the video recordings analysed in this study has been attached to this work.

aunt and producing vocalisations and coughs at the same time, as if he were trying to speak. These vocalisations are complemented by little squeals of delight. He is also moving all the time his arms and legs arbitrarily; I think his movements are not yet well organized, but they communicate happiness and excitement to his caregivers.

Aforementioned (Section 4), it is from the age of two months when babies experience a dramatic change in their behaviours. That is what occurs here, the most representative change I can observe from Daniel´s behaviour is the vocalizations he begins to produce. He starts to be interested in people around him; he reacts to his aunt´s voice not only by emitting those sounds but also by moving arms and legs. These features seem to be more expressive than eye gaze because Daniel´s aunt keeps talking to him as if she knew he was paying attention to her. It is then at the age of two months that Daniel´s behaviour becomes more social, as Richelle pointed out in his theory it is from the age of two months onwards that children begin to produce vocalizations and smile. Both achievements, he claims, play an important role in the individual´s socialization (Richelle 1989: 56).

VIDEO RECORDING 3 (THIRD MONTH)

Daniel is held by his mother who placed him in front of her by laying his head on a pillow. Daniel is putting his fingers in his mouths and he seems to be looking at the camera. Suddenly, his father talks straight to Daniel by producing a sound which is something like “aauuuu”. It is then when Daniel fixes his gaze on his father´s face showing a surprise facial´s expression. After this, Daniel tries to reproduce his father´s sound; his father produces again the same sound, so

Daniel stays quiet to listen to his father. When his father finishes, Daniel removes his fingers from his mouth and produces the same sound as his father´s. His father continues producing sounds and talking to him, but he now stays quiet. Daniel seems to be paying attention to those sounds and also to their parents´ faces. It is then when his mother intervenes by speaking to him in a "sing-song" tone, and Daniel as a response produces a smile. His mother continues talking to him and he also produces some vocalisations but when he hears his mother´s voice he stays quiet because he seems to like to listen to his mother´s voice.

What I should mention about this video is that it perfectly represents the child´s learning process of taking turns in conversation, as Perinat claimed (1986: 33). In this video, Daniel seems to be waiting for her mum and dad to talk before producing any sound. He hears with great attention what their parents say to him and fixes his gaze on their faces every time they speak. Once they finished talking, he begins to produce vocalizations and tries to imitate their parents´ sounds. It is obvious that Daniel´s vocalizations are intentional because he first tries to reproduce his father´s sound until he finally gets it. He seems to be learning how communication functions. Another aspect to deal with in this video is the mother-infant relation. This bond takes place from the very beginning of the infant´s life and even previously when the baby is in the mother´s womb and the child can already hear his mother´s voice. Regarding this mother-child connection, Kaye (1982: 37) stated that it takes place because "the mother is the person with whom the vast majority of young infants spend the vast majority of time". This connexion between them goes increasing along the baby´s development. So, by the age of two months the baby begins to fix at human faces and then they learn to recognize them (Perinat 1986: 22). In this way, at around the age of three months, babies begin to communicate with their mothers by means of facial expression. So, they react accordingly to their mother´s expressions and voice. In the same way Daniel reacts towards what his mum said to him by expressing joy and smiling. This is also related to the sucking paradigm experiment carried out by De Casper & Fifer which tested the newborns' preference to their mother´s voices (Op.cit: 24).

VIDEO RECORDING 4 & 5 (FOURTH MONTH)

In the video recording 4, Daniel is in the arms of his aunt who is sitting on the sofa. In this recording, no adult is paying attention to him, but he seems to be entertained on his own. He is putting his fit into his mouth and at the same time he is moaning and muttering; he seems to be talking to himself. He also tries to put his dummy on his mouth. He seems to be relaxed or

maybe bored. It is around this age that children begin to manipulate objects, as Daniel does. He is playing with his dummy and observes it while he tries to chew it. He also begins to babble while playing with his dummy.

Apart from the object´s attention and babbling which are distinctive features of this age, Daniel seems to be interested in music as well, and it may be because of their attention to adult´s vocalisations. As Trevarthen stated (Trevarthen and Aitken 2001: 12-13), this vocal play begins to appear accompanied of rhythms and music patterns. That is why those new sounds catch their attention. In video recording 5, Daniel is lying on the sofa and his cousin is singing a song to him. She uses hand gestures at the same time she sings. When Daniel hears the song, he shows a surprised facial´s expression and begins to shake his body. Unlike in month 1 and 2, Daniel´s behaviour is now intentional because he reacts to different stimuli such as the music pattern. He also fixes his gaze on his cousin´s face and hands. Trevarthen (1982) also explained that it is in this period when children often react to music pattern with corporal movements as Daniel does. He expresses excitement and joy when he hears his cousin singing and begins to move and shake all his body while producing smiles accompanied by little squeals of delight.

VIDEO RECORDING 6 &7 (FIFTH MONTH)

In video recording 6, Daniel is on the sofa and his mother is recording the video from above. She is not talking to him. At first, Daniel is quiet, but then he begins to emit sounds and shrieks at the same time he moves his arms and legs deliberately to get his mother´s attention. He, then, attempts to lift himself up but he cannot. While doing this, he begins to grunt and struggle. Daniel´s behaviour in this video can be related to Piaget´s concept of egocentrism, in the sense that children believe that everything centres on them in the sensory-motor stage. This occurs unconsciously in children because they are not yet able to distinguish between the self and the rest of people. So, infants believe that everything surrounding them depends on what they perform and that everybody is

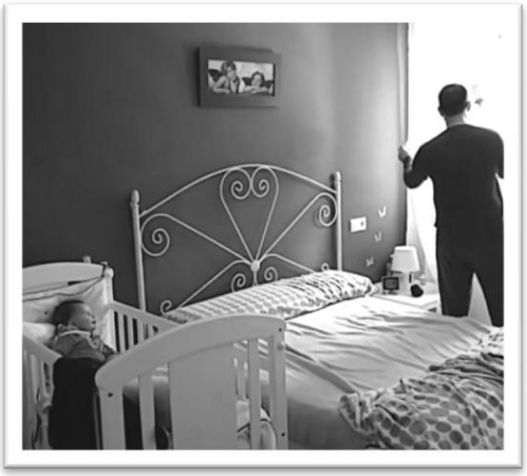
there to satisfy their necessities (Lafuente 1977: 140). Therefore, I think Daniel pretends to get his mother´s attention to fulfil his necessities.

At this age, Daniel also seems to enjoy people playing with him. In video recording 7, his uncle has picked Daniel up and moves him closer to his aunt and then further away from her, who is seated on the sofa. Every time his uncle moves Daniel closer to her, he smiles and, when he moves Daniel away from her, Daniel waits for the next movement and begins to move his legs. As they grow up, children seem to interact with people easily and Daniel´s development is an example of this. At around this age, they begin to communicate with people around them in a better way by showing what they like and enjoy. They become willing to take part in the surrounding situations as in games or jokes with adults (Perinat 1986: 171-172).

VIDEO RECORDING 8 & 9 (SIXTH MONTH)

Daniel is seated on my knees. He is playing with the label of a cap and putting it in his mouth. Then, my mother, who is recording the video, talks to him softly and in that moment Daniel looks at the camera. Afterwards, we try to take the label out of his hand, so we take the cap out. Daniel, who seems now to be annoyed, tries to follow the cap with his eyes and begins to moan. In that moment, before he grumbles we offer him a teether so that he can chew it without getting hurt, he takes and puts it on his mouth. As mentioned on page 24, children from the age of six months are often interested in objects´ utilization and in adult´s actions (Perinat 1986: 111). Daniel here seems to be interested in using the label as a teether. Around this age, children also begin to act and transfer objects, in this case Daniel has learnt to catch a given object. At this age, Daniel also begins to produce resounding laughter. In video recording 9, he is held by his aunt and looking at her smilingly waiting for her to produce a head movement. When she does it, Daniel begins to laugh. This reaction becomes common in children as they grow up; they seem to enjoy playing and participating in games with people around them (Op. cit.: 171).

VIDEO RECORDING 10 (SEVENTH MONTH)



Daniel is lied down in his cot placed in his parents´ bedroom. He is looking at his father who is also in the room. Daniel´s father is placed next to the window because he was trying to catch a fly with the flyswatter. When his dad begins to shake the flyswatter quickly, Daniel begins to produce a roaring laughter. Daniel stops laughing when his dad stops doing the movement. It is then, when his dad joins the game and begins to shake the flyswatter to see Daniel´s reaction. His dad comes near Daniel and does the same movement, the last again bursts into laughter. Daniel´s father continues playing with him and alternates the movements with short pauses. When his dad keeps still, Daniel anticipates to the expected movement and begins to laugh. As mentioned in the two latest video recordings, as soon as they grow up, children begin to know how interaction functions and to show how they like to interact with adults. They are now able to clearly express their intention through smiles, laughter or corporal movements, so their parents can also comprehend their actions. In this video recording, for example, Daniel´s reaction lets his dad know that he enjoys that game. Hence, Daniel introduces his dad to the game.

After analysing all these videos and comparing Daniel´s evolution in communication with the theoretical concepts, I have realised that most of the stages in which psycholinguists divide the child´s cognitive development take place in Daniel´s behaviour, although not in an exact and accurate way. Concerning the latter, we have to take into account that the aim of a research like this is not to provide a generalised hypothesis from the data obtained but to establish a causal-effect relation between the subject of the inquiry and the contextual surroundings. That is what I have tested here, that infants are influenced by society and their relations with the world from the very beginning and that those relations are the main stimuli they have for the further developing of their knowledge and communication skills.

To clearly show the evidence obtained from this research, I have collected the main features of each video recording in Table 3 to summarise Daniel´s development in preverbal communication.

Table 3. Daniel´s development overview on preverbal communication

APPRX. AGE *(in months)*	STIMULI	DANIEL´S REACTION	COMMENTS
1	Physical contact and dad´s voice	Smile and eye gaze	Limited repertoire of behaviours. Daniel reacts to external stimuli and expresses his state of comfort.
2	Aunt´s voice and facial expressions	Corporal movement, eye gaze, vocalizations, coughs and little squeals.	Daniel´s behaviours seem to be developing upwards. He shows an increasing interest on people around him.
3	Dad and mom´s voices	Surprise´s facial expression, smile, vocalizations, imitated sounds, eye gaze, hands movements.	Daniel´s reactive behaviours are produced in response to familiar sounds. Daniel responds to affective messages such as his mum´s tone of voice and facial expression. He is learning turn- taking interaction.
4	Object (his dummy) and music	Object´s attention and manipulation, mumbling, surprise´s facial expression, corporal movement, smile, squeals.	Daniel´s communicative intention is increasing. He seems to pay attention to activities and objects.
5	Silent	Corporal movements, shrieks, grumbles, rising up attempt.	Daniel´s behaviours are egocentric and communicative. Daniel seems to need his mother´s help. He wants his mother to pay attention to him.
6	Object and adult´s voice and head movements.	Object´s attention and manipulation, grumble, smile, laugh, corporal movement, enjoyment´s facial expression.	Daniel´s behaviours and actions become more synchronized. He seems to draw a major attention to objects. He is learning the transference pattern of objects. He also enjoys interacting with adults.
7	Dad´s action and game	Resounding laughter, body shaking, smile, enjoyment´s facial expression, anticipating to movements.	Daniel´s behaviour becomes more social. Apart from enjoying the interaction with adults, he seems to like cooperative games.

7. CONCLUSION

From the moment they are born, babies can communicate with people around them. They are able to express meaning by using both verbal and non-verbal signs such as babbling, corporal movements or facial expressions. In this context, we already know that parent's role is the most significant aspect in babies' early development as they are the stimuli children need to learn and to take part in society. It is because of the basic motor skills, that children need external help to fulfill their actions. Specifically, it is at first the mother´s child who functions as the key to the infant´s evolutionary process. By means of the sucking paradigm, in which the alternation of jiggling and stopping functions as a turn taking conversation, they begin to communicate to each other. From that moment onwards, the infant will go on developing new forms of communication, (some more obvious than others), which will be increasingly complex and well-organized.

Answering the two hypotheses mentioned at the beginning of this paper about whether "the first sounds and gestures children produce constitute the first signs of language development and communicative skills" and whether "children use these preverbal signs to communicate and interact with others", I have drawn the conclusion that these children´s actions and behaviours represent the communicative skills or tools children have to interact with others and that they begin to appear shortly after birth. What leads them to communicate is the desire to take part in the situations and events in which people get usually involved. Therefore, it is not surprising that infants in their first year of life attend and imitate adults´ actions and their speech in a special way, as proved in this single case study.

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